

Plusalus is the social network of a scientific group (BioAcyl Corp) dedicated to apply proprietary medical knowledge accumulated for over a decade and which has formulated an advanced system of oral care reuniting proprietary experience with knowledge published in the scientific literature during the last 35 years.

An innovative delivery system into gums and teeth, the mouth and pharynx of the agents identified in the research that can balance bacterial populations and dissolve biofilm is fundamental towards the efficacy of the system. The vehicle which is fully edible serve towards that effect. The finished product can be used to treat problems or for daily care that can span for a lifetime. .

The new method has finally turned away from the failed and over-hyped intent of killing bacteria enduring for over a century. So through the extent of the present text you will not meet at any moment such foolish claim.

On one aspect this new approach is oriented towards modifying the morbid traits of *Streptococcus mutans sobrinus* seeking the scope of modifying the ability that this bacteria has to fom dental plaque and prevent its adherence to it. From plaque this bacteria produces the acid that will dissolve enamel (acidogenic bacteria).. The other aspect tends to restore the correct microenvironment that promotes healthy normal physiological conditions in the mouth.

The latter will not only diminish cavities drastically, but also it makes possible to normalize the sub-gingival plaque (present under the gums) and prevent the formation of biofilm there where multiple strains of anaerobic and microaerophilic bacteria cooperate to attack the gums undermining their tissue; especially the ligament that holds the tooth to the bone. Biofilms are shields (like a camping tent) that colonies of bacteria secrete in order to isolate themselves form antiseptics and antibiotics. Such bacteria become insensible to any attacks thrown onto them with the purpose of annihilating them.

Scientists at BioAcyl Corp stress that it has been disregarded for almost 4 decades the fact that attack to healthy tissue is only possible if the bacteria in plaque are able to modify the microenvironment to one that will favor them. Contrariwise such bacteria could not survive in a physiological microenvironment and are unable to populate the subgingival area. So that something has to change te physiological state for the attack to take place. If bacteria have successfully changed the healthy microenvironment and colonized the area, direct anti-biofilm action by the agents discovered at BioAcyl Corp plus restoring the physiological conditions of the microenvironment are the most effective ways for dealing with guns and teeth problems. The physiological system devised at BioAcyl Corp is a fresh and real option in dealing with simple or as well serious problems of the oral cavity.

Other agents helping in such situations have been know for quite sometime. These are the so called alditols or sugar derived alcohols. Contrary to popular belief the great majority sugars do not produce caries. To be able to produce caries a sugar must be recognized by the acidogenic bacteria y internalized in the microbe and turned into acid. Sugars most commonly have 4 to 6 carbons, some may contain 9. The useful ones that are not fully identified by bacteria are eritritol, xylitol and sorbitol and respectively in order of 4, 5 and 6 carbons. The most similar to common sugar is sorbitol differering only in how OH radicals are disposed stereochemically; yet it is quite less cariogenic than common sugar. Eritritol and xylitol are powerfully anticariogenic. But very interestingly, when pro,vided in place of sugar they trick the bacteria to produce defective plycoproteins used by the community of bacteria to arm the biofilm. So that formation of the shield is incomplete weak and in the end unsuccessful. No longer can bacteria guard themselves to survive as a modified community under a membrane. Xylitol know now for its anti.cavity effect for 35 years has been tested for its anti-biofilm effect. Eritritol is more recently also known for such actions. It is common that combinations of the alditols are use Kauko K. Mäkinen 2010.

Among other effects alditols stabilize calcium phosphate from saliva. Xylitol in particular can form complexes with calcium displacing water molecules from the solvation sphere on action of the hydroxyl groups of the alfditol and keeping the cation (Ca^{++}) soluble in the plaque and saliva. Two or more hidroxyls of the alditol can displace 2 molecules of water from the salvation sphere of the cation Mäkinen, Söderling 1984, Angyal 1972.It is also possible to facilitate calcium absorption, independent of the vitamin D effect. in the intestine by ingesting xylitol.Hikorazu et al. 2011.Some studies have demonstrated remineralization of deep caries (dentinal caries) using xylitol K K Mäkinen 1995.Other effects (specific and non-specific) of xylitol tend to restore the physiological environment of saliva on its own account rich in calcium phosphate, mucins and proteins J Chirife 1984 that help restore the salivary film (AM Vacca and Smith 2000) and remineralization of teeth. The most important is the affinity that xylitol has for water and the humectant and protecting power on tissues. Finally its sweetness is equal to the one of sugar and it will stimulate salivation, that by itself helps to remineralize.

BioAcyl agents acto on the normalization of the microenvironment keeping a physiological pH, balanced redox state and energy supply. Taken together a system has been perfected that consists of Periactil Precondition and Periactil. The first component is used with a brush and second is applied on teeth and gums by distributing it with the tongue.. Mouthrinse is banned since it can annul the protection conferred by Periactil gel which is mucoadherent. Periactil is edible and Periactil Precondtion is totally harmless if swallowed. The remaining Periactil in the mouth can be swallowed to protect the throat.

The system is able to deliver superior results by means of normalizing microenvironments and balancing the microbiota that normally populates the oral cavity. Such results are decidedly not obtained by trying to kill bacteria.